

IN THE CLAIMS

1. (Currently amended) A water-based cyan ink for ink-jet printing, comprising water insoluble colored polymer particles,

wherein an ink-jet image is formed by jetting the water-based cyan ink on a porous ink-jet recording sheet with an ink-jet printer without being subjected to a post-treatment, and the ink-jet image has the following set of color coordinate values in a $L^*a^*b^*$ color space when L^* is in a range of $65 < L^* < 75$:

(i) $-20 < a^* < 20$; and

(ii) $-20 < b^* < 20$,

each of the water insoluble colored polymer particles contain a dye covered with a polymer, has a core-shell structure having a core portion and a shell portion, the core portion comprising a dye and a first polymer and the shell portion comprising a second polymer; and a weight ratio of the polymer the first polymer and the second polymer to the dye is in the range of 0.4 to 10.

2. (Previously presented) The water-based cyan ink of claim 1 wherein the water insoluble colored polymer particles have a volume average particle diameter of 10 to 200 nm.

3. (Previously presented) The water-based cyan ink of claim 1 further comprising a water-soluble polymer, wherein the water insoluble colored polymer particles satisfy Formula (1):

Formula (1)

$$10 X^{-0.7} < Y < 40 X^{-0.7}$$

wherein X is a volume average particle diameter; and

Y is a polydispersity index which is defined by the following formula:

$$Y = (D_{90} - D_{10}) / D_{50},$$

wherein D_{90} , D_{50} , and D_{10} are respectively particle diameters at which an integral of a distribution function dG ($dG = F(D) \times dD$) is equal to 90 volume %, 50 volume % and 10 volume % of the total volume of the water insoluble colored polymer particles, wherein G is a volume of the particle, D is a diameter of the particle and $F(D)$ is a volume frequency function.

4. (Previously presented) The water-based cyan ink of claim 1 further comprising a water-soluble polymer in an amount of not less than 2 times of the weight of the water insoluble colored polymer particles.

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Previously presented) An ink set for ink-jet printing containing a water-based cyan ink which comprises water insoluble colored polymer particles,

wherein an ink-jet image is formed by jetting the ink set on a porous ink-jet recording sheet with an ink-jet printer without being subjected to a post-treatment, and the ink-jet image has the following set of color coordinate values in a $L^*a^*b^*$ color space when L^* is in a range of $50 < L^* < 90$:

(i) $-20 < a^* < 20$; and

(ii) $-20 < b^* < 20$,

the water insoluble colored polymer particles contain a dye covered with a polymer, and a weight ratio of the polymer to the dye is in the range of 0.4 to 10.

9. (Original) An ink set for ink-jet printing containing the water based cyan ink of claim 3.

10. (Canceled)

11. (Canceled)

12. (Previously presented) The water-based cyan ink for ink-jet printing of claim 1 wherein the polymer contained in the water insoluble colored polymer particles has an acetal group, a carbonic acid ester group, a hydroxyl group or an ester group.